



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,022	01/29/2004	Yoji Nakatani	501.43385X00	2664

24956 7590 08/03/2005

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.  
1800 DIAGONAL ROAD  
SUITE 370  
ALEXANDRIA, VA 22314

EXAMINER
----------

TRUONG, BAO Q

ART UNIT	PAPER NUMBER
----------	--------------

2187

DATE MAILED: 08/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/766,022

Applicant(s)

NAKATANI ET AL.

Examiner

Bao Q. Truong

Art Unit

2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 6 and 11 is/are rejected.
- 7) ☒ Claim(s) 2-5, 7-10 and 12-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/29/04 & 1/24/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 2187

1. The instant application having Application No. 10/766,022 has a total of 15 claims pending in the application; there are 3 independent claims and 14 dependent claims, all of which are ready for examination by the examiner.

***Oath/Declaration***

2. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in 37 C.F.R. § 1.63.

***Priority***

3. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 24 October 2003. It is noted that applicant has filed a certified copy of the JP 2003-364793 application as required by 35 U.S.C. 119(b).

***Information Disclosure Statement***

4. As required by M.P.E.P § 609 (C), the applicant's submission of the Information Disclosure Statements, dated on 29 January 2004 and 24 January 2005, is acknowledged by the examiner; and the cited reference has been considered in the examination of the claims now pending. As required by M.P.E.P § 609 C (2), a copy of the PTO-1449 initialed and dated by the examiner is attached to the instant office action.

***Drawings***

5. The applicant's drawings submitted are acceptable for examination purposes.

*Specification*

6. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

7. The abstract of the disclosure is objected to because it is not within the range of 50 to 150 words (it contains 158 words). Correction is required. See MPEP § 608.01(b).

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 6, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Ito et al. (Pub. No. US 2002/0016792 A1).

Referring to claim 1, Ito discloses a storage system (see figures 1, 9, 14, 15: combination of elements 200 and 10) comprising:

at least one disk to store data (see figures 1, 9, 14, 15: element 10 and paragraph [0039]);

a disk control unit to control writing and reading of data to and from said at least one disk (see figures 1, 9, 14, 15: element 11 and paragraph [0039]);

a disk cache for transmitting and receiving data to and from said at least one disk (see figures 9 and 14: element 13 and paragraph [0078]);

a file server (see figure 1: element 200) including a CPU (see figure 1: element 210), a main memory to store programs and data for said CPU (see figure 1: element 220 and paragraph [0040]), and a network interface to be coupled to clients through a network as inherently existing in a network file-system (see figure 15: element 1); and

interfaces for sending and receiving data to and from other storage systems through a communication link (see figure 14: elements 299, 399 and paragraph [0136]);

wherein said main memory includes a file system-processing unit managing storage areas of said at least one disk so that files are correlated with data locations on said at least one disk as a file server unit in the memory (see figure 1: element 240; paragraph [0040]; and paragraph [0012]: lines 11-22), and a file-system cache to be used by said file system-processing unit (see figure 1: combination of elements 270-280 and paragraphs [0047-0048]);

wherein said disk control unit receives data of a file that has been updated in another storage system and a history of file-management information through said communication link and stores the received data of a file and the history of file-management information on the disk (see figure 1 and paragraph [0075]: lines 6-27);

wherein said disk control unit refers to the history of the file-management information on the disk and updates file-management information in said file-system cache in accordance with the update of the file performed in said other storage system (see figure 1 and paragraph [0075]: lines 27-34); and

wherein, when said disk control unit receives a read request from a client coupled to the storage system, said disk control unit refers to the file-management information updated in said file-system cache and transfers the contents of the updated file to said client according to the file-management information (see paragraph [0012]: lines 11-15 and paragraph [0063-0064]).

Referring to claim 6, Ito teaches a file-reference method of a storage system, wherein said storage system comprises:

at least one disk (see figures 1, 9, 14, 15: element 10 and paragraph [0039]);

Art Unit: 2187

a disk control unit to control writing and reading of data to and from said at least one disk (see figures 1, 9, 14, 15: element 11 and paragraph [0039]);

a disk cache for transmitting and receiving data to and from said at least one disk (see figures 9 and 14: element 13 and paragraph [0078]);

a CPU (see figure 1: element 210);

a main memory to store programs and data for said CPU (see figure 1: element 220 and paragraph [0040]);

a network interface to be coupled to clients through a network as inherently existing in a network file-system (see figure 15: element 1); and

interfaces for sending and receiving data to and from other storage systems through a communication link (see figure 14: elements 299, 399 and paragraph [0136]);

wherein said main memory includes a file system-processing unit managing storage areas of said at least one disk so that files are correlated with data locations on said at least one disk as a file server unit in the memory (see figure 1: element 240; paragraph [0040]; and paragraph [0012]: lines 11-22), and a file-system cache to be used by said file system-processing unit (see figure 1: combination of elements 270-280 and paragraphs [0047-0048]);

said file-reference method comprising:

(a) a storing step in which said disk-control unit receives contents of a file that has been updated in another storage system and a history of file-management information through said communication link from said other storage system and stores the contents of a file and the history of file-management information on a disk (see figure 1 and paragraph [0075]: lines 6-27);

Art Unit: 2187

(b) a monitoring step in which said file system-processing unit refers to the history of the file-management information stored in said disk and (c) an updating step in which, based on a reference to the history of the file-management information, said file system-processing unit updates the file-management information in said file-system cache in accordance with the update of the file in said other storage system (see figure 1 and paragraph [0075]: lines 27-34); and

(d) a transfer step in which, when said disk-control unit receives a read request from a client coupled-to the storage system, the storage system refers to the file-management information updated in said file-system cache and reads, from the disk, the contents of the updated file and transfers the contents to said client (see paragraph [0012]: lines 11-15 and paragraph [0063-0064]).

Referring to claim 11, Ito discloses a network system comprising a first storage system (see figure 15: elements 200 and 10) and a second storage system (see figure 15: elements 100 and 30; elements 300 and 20) each of which comprises:

a disk (see figures 1, 9, 14, 15: element 10 and paragraph [0039]), a disk-control unit to control writing and reading of data to and from said disk (see figures 1, 9, 14, 15: element 11 and paragraph [0039]), and a disk cache for transmitting and receiving data to and from said disk (see figures 9 and 14: element 13 and paragraph [0078]);

a file server (see figure 1: element 200) including a CPU (see figure 1: element 210), a main memory to store programs and data for said CPU (see figure 1: element 220 and paragraph [0040]), and a network interface to be coupled to clients through a network as inherently existing in a network file-system (see figure 15: element 1); and



interfaces for sending and receiving data to and from other storage systems through a communication link (see figure 14: elements 299, 399 and paragraph [0136]);

wherein said main memory includes a file system-processing unit managing storage areas of said at least one disk so that files are correlated with data locations on said at least one disk as a file server unit in the memory (see figure 1: element 240; paragraph [0040]; and paragraph [0012]: lines 11-22), and a file-system cache to be used by said file system-processing unit (see figure 1: combination of elements 270-280 and paragraphs [0047-0048]);

wherein the disk-control unit of said first storage system receives contents of a file updated in the second storage system and a history of file-management information from the second storage system through said communication link and stores the contents of a file and the history of file-management information on the disk in said first storage system (see figure 1 and paragraph [0075]: lines 6-27);

wherein the file system-processing unit of said first storage system refers to the history of the file-management information on the disk and updates the file-management information in the file-system cache of said first storage system in accordance with the update of the file in said second storage system (see figure 1 and paragraph [0075]: lines 27-34); and

wherein, when said first storage system receives a read request from a client, said first storage system refers to the file-management information updated in said file-system cache reads, from the disk, the contents of the update file received from said second storage system, and transfers the contents to said client (see paragraph [0012]: lines 11-15 and paragraph [0063-0064]).

*Allowable Subject Matter*

10. Claims 2-5, 7-10, and 12-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 2 is allowable for the combination including the limitation of:

**“wherein said file system-processing unit comprises a metadata-update monitor monitoring the update of metadata, including data for file management, by referring to a journal log, including a history of said management information, and a metadata-updating unit updating the metadata in said file-system cache when said metadata-update monitor detects the update of a file.”**

Claims 3-5 are allowable for at least the reason indicated with respect to claim 2 above.

Claim 7 is allowable for the combination including the limitation of:

**“wherein said monitoring step includes a metadata-update monitoring step of monitoring the update of metadata, including data for file management, by referring to a journal log, including a history of said management information, and**

**wherein said updating step includes a metadata-updating step of detecting the update of the file by said metadata-update monitoring step and updating the metadata in said file-system cache.”**

Claims 8-10 are allowable for at least the reason indicated with respect to claim 7 above.

Claim 12 is allowable for the combination including the limitation of:

**“wherein the file system-processing unit of said first storage system comprises:**

**a metadata-update monitor monitoring the update of metadata, including data for file management, by referring to a journal log, including a history of said management information; and**

**a metadata-updating unit updating the metadata in said file-system cache when said metadata-update monitor detects the update of the file.”**

Claims 13-15 are allowable for at least the reason indicated with respect to claim 12 above.

Art Unit: 2187

**Conclusion**

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See Form PTO-892.

Kitamura et al. (US 2003/0163553 A1) discusses a network storage system including a local storage and a remote storage, wherein each of the storages including a file server and a storage device.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bao Q Truong whose telephone number is (571) 272-4202. The examiner can normally be reached on Monday-Friday from 7:00 AM to 4:00 PM (ET).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald A Sparks, can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

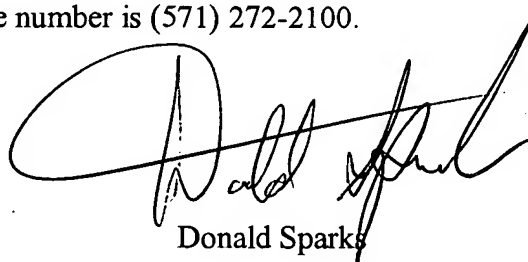
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

*Bao Q Truong*

BT

Patent Examiner

29 July 2005

A handwritten signature in black ink, appearing to read "Donald Sparks", is written over a horizontal line.

Donald Sparks

Supervisory Patent Examiner

Technology Center 2100